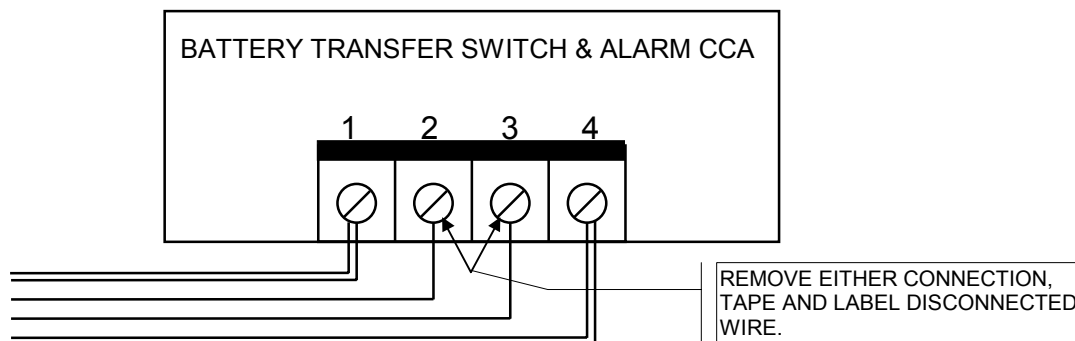


Ocean Engineering Technical Data Sheet SDB/MAC Mod for Installations with No Auxiliary Battery

In a standard solar powered lighthouse system, one of the primary functions of the Solar Distribution Box (or MultiArray Controller) is to monitor main battery voltage and transfer the load to the auxiliary battery if it falls to unsafe levels (below 11.0VDC). However, when no auxiliary battery is installed, the SDB (or MAC) becomes simply a low-voltage disconnect for the main battery; i.e., when its voltage falls below 11.0VDC, the battery is completely disconnected and the entire system becomes disabled due to lack of any auxiliary power source. In most cases, this low-voltage disconnect function is actually desirable because it prevents permanent deep-discharge damage to the battery which will cause its premature failure. In some cases, however, continuous aid operation is critical and much more important than saving the battery. If your system has **NO AUXILIARY BATTERY** installed and you wish to give up the low-voltage disconnect function in favor of longer aid operation, you may do so quite easily. However, under low-voltage conditions your main battery will most likely continue to discharge and suffer damage if it is not recharged in a timely manner. Understanding this, if you wish to proceed, the SDB or the MAC must be modified slightly. In either case the goal is to disable the Load Transfer Relay by disconnecting one wire:

If using an **SDB**, the modification is quite simple: (1) Remove the clear lexan shield mounted over the top of the two voltage monitoring circuit cards; (2) identify the battery transfer circuit card (left side, no mini-relay on board); (3) disconnect either the orange or gray wire from the terminal block (positions 2 or 3 of the 4-position terminal block); (4) tape or otherwise insulate end of disconnected wire; (5) tag disconnected wire to identify its original connection; (6) reinstall lexan shield.

If using a **MAC**, the modification, although identical, is more difficult because the circuit card is mounted behind the mounting panel (i.e., the mounting panel must be removed from the enclosure to access the circuit card): (1) Remove entire mounting panel from the MAC enclosure by unscrewing the four large mounting bolts; (2) identify the battery transfer circuit card (right side when looking at panel from the rear, no mini-relay on board); (3) disconnect the wire from either position 2 or 3 of the 4-position terminal block (since all wiring will be exposed, trace the disconnected wire to confirm it terminates at one of the relay's coil terminals); (4) tape or otherwise insulate end of disconnected wire; (5) tag disconnected wire to identify its original connection; (6) reinstall the mounting panel.



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